

# Environmental Restoration

A Periodic Update on Rocky Flats Cleanup



October/November 1992

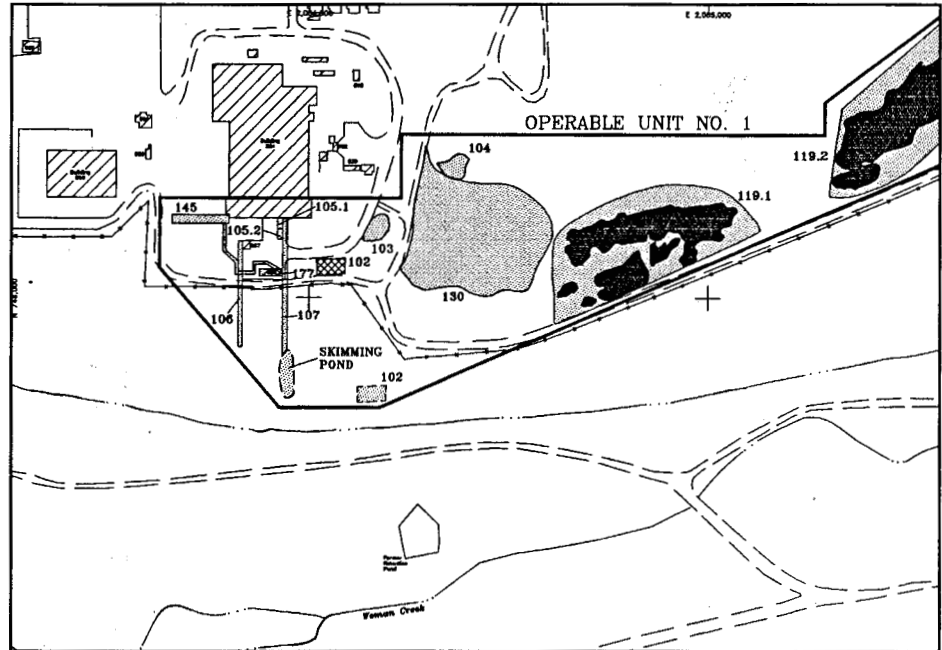
EG&G ROCKY FLATS

## OU1 Draft Phase III RFI/RI Report

The Draft Phase III RCRA Facility Investigation/ Remedial Investigation (RFI/RI) of the 881 Hillside Area Operable Unit No. 1 (OU1) at the Rocky Flats Plant has been completed and submitted to the Colorado Department of Health (CDH) and the Environmental Protection Agency (EPA) for comment.

The objectives of the Phase III RFI/RI were to (1) characterize the surface and subsurface physical features at the operable unit, (2) characterize the nature and extent of contamination at the site, and (3) provide a baseline risk assessment. The baseline risk assessment considered contaminant fate and transport as well as the threat to public health and the environment. Additionally, the Phase III RFI/RI provided data for feasibility studies of remedial alternatives as appropriate.

The 881 Hillside was originally identified as a high priority area due to high concentrations of volatile organic compounds (VOCs) detected in the ground water, and its proximity to Woman Creek. In addition, Phase I and II remedial investigations showed elevated concentrations of trace metals, radionuclides, and inorganic constituents.



The highest levels of contaminants detected at OU1 are at Individual Hazardous Substance Site (IHSS) 119.1. Semivolatile organic compounds (SVOCs), i.e. common asphalt materials, were found at IHSS 130.

Surface soils in the eastern portion of OU1 are contaminated with wind-blown plutonium-239, -240 and americium-241 transported from the 903 Pad. Road dust, vehicle exhausts and other combustion sources also exist in surface soils of the eastern section of OU1.

Other contamination at OU1 consists of trace levels of organic and inorganic compounds in subsurface soils and ground water.

Contaminant migration at the site was evaluated in terms of the identified pathways at OU1. Data used to characterize site conditions include

analytical results from soil samples collected during the Phase III RFI/RI field investigation that took place from August to December 1991. Migration of VOCs in ground water at IHSS 119.1 appears to be extremely limited, constrained by site geology and the lack of seasonally continuous water flow (DOE, 1991k, Ground Water Assessment Plan).

The concentration of SVOCs in subsurface soils at IHSS 130 are expected to decrease with time due to natural degradation processes. These SVOCs have a low potential for migration and should remain confined to subsurface soils at IHSS 130. Metals and radionuclides in subsurface soils are also expected to remain immobilized. Radionuclides and SVOCs in surface soils, however, can be redistributed by wind or surface water erosion.

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# OU16 NO FURTHER ACTION DOCUMENT SUBMITTED

**A**s discussed in the September 1992 issue of the ER Update, the "No Further Action Justification" document for OU16 was revised and resubmitted to EPA and CDH for their approval.

EPA, CDH and Department of Energy (DOE) agreed that most of the IHSSs within OU 16 do not need further action. A RFI/RI was not required for the IHSSs in OU16 because threats to human health and the environment are lacking, however EPA and CDH required an alternative demonstration of the lack of unacceptable risk.

The seven Individual Hazardous Substance Sites (IHSSs) comprising OU16 include: IHSS 185 - Solvent Spill; IHSS 192 - Antifreeze Discharge; IHSS 193 - Steam Condensate Leak - 400 Area; IHSS 194 - Steam Condensate Leak - 700 Area; IHSS 195 - Nickel Carbonyl Disposal; IHSS 196 - Water Treatment Plant Backwash Pond; and IHSS 197 - Scrap Metal Sites - 500 Area.

According to the Historical Release Report (HRR) for the Rocky Flats Plant, (U. S. DOE, 1992), potential risks to human health and the environment associated with releases and spills at IHSSs 185, 192, 193, 194 and 195 have been mitigated by past response actions and/or natural degradation processes that eliminate the source or exposure pathways.

For example, in the case of IHSS 192, 155 gallons of antifreeze containing 25% ethylene glycol were drained into a floor drain in building 708 in 1980. The floor drain discharged into a storm runoff collection system. Following the release, 5,000 gallons of water were flushed

through the drainage system into Pond B-1. With the addition of surface runoff and rainwater during the twelve years since the release, the ethylene glycol has been diluted to concentrations below the detection limit. Similar degradation and mitigation has occurred at the other four IHSSs, and further action is not justified.

In accordance with EPA guidance, a No Further Action decision is appropriate at sites where previous removal action or natural environmental processes lessen the risk to human health and the environment. The risks associated with the OU16 IHSSs and the need for further action were assessed using a conceptual model to evaluate the exposure pathways by which humans,

animals and vegetation may be exposed to contaminants.

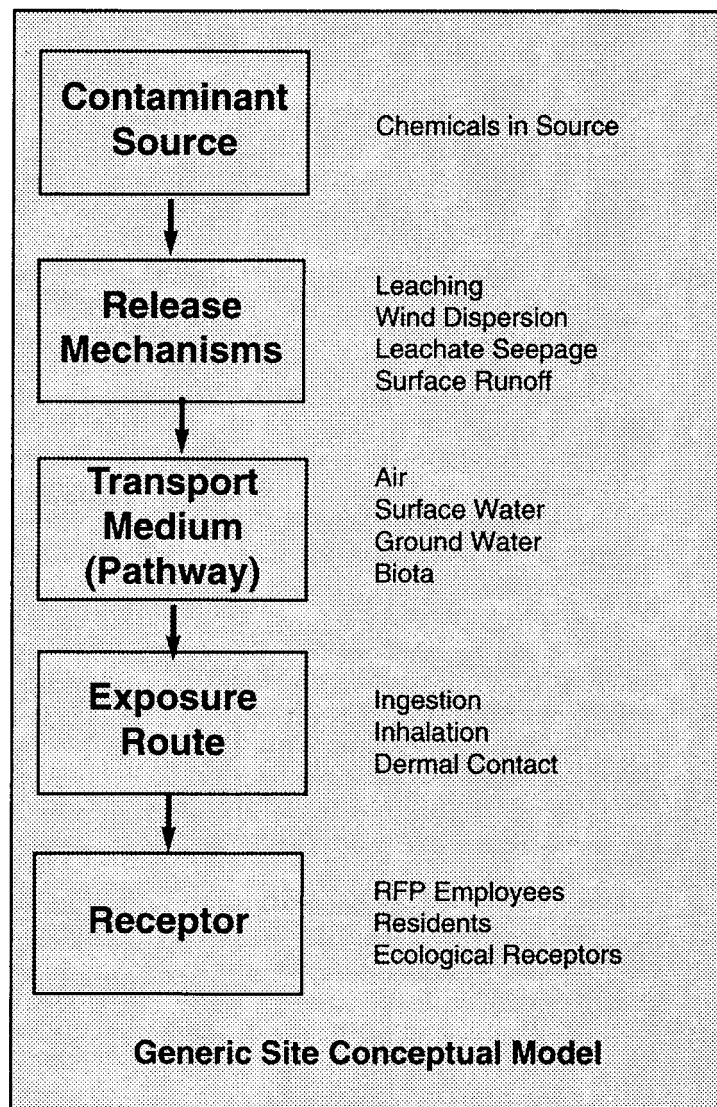
EPA defines an exposure pathway as "a unique mechanism by which a population may be exposed to chemicals at or originating from their site".

As shown in the drawing, an exposure pathway must include a contaminant source, a release mechanism, a transport medium (pathway), an exposure route, and a receptor. An exposure pathway is not complete without each of these five components. If an exposure pathway is not complete, no risk is posed to human health and the environment, and no further action is warranted.

In IHSS 196, the Water Treatment Plant Backwash Pond, the previous removal has not eliminated the source. Also, natural environmental processes have not prevented release and migration of contaminants. Further action for IHSS 196 is already scheduled as a part of IHSS 115 (Original Landfill) under OU5.

Further action of IHSS 197 is also warranted given the uncertain characterization of the remaining waste materials and their volumes. The construction of the protected area perimeter fence also hindered the removal of remaining waste materials, further complicating IHSS 197. The investigation of IHSS 197 can be accomplished by including it with the investigation of IHSS 117.1 and thus will be investigated as a part of OU13.

The revised No Further Action Justification document for OU16 was submitted to EPA and CDH October 16.



The public health evaluation at OU1 has shown no measurable impact on human health from contamination present at the site. There is no quantifiable current risk to human health at OU1 for which the lifetime excess cancer risk exceeds the National Contingency Plan risk range. The greatest risk at the site was found to be the potential impact of breathing air directly above IHSS 119.1. Even at IHSS 119.1, the contaminated areas are very restricted in size and the concentration of contaminants detected are non-homogeneous. The level of risk

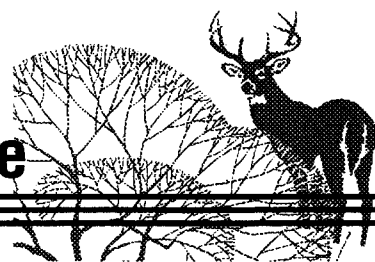
to plants, animals and humans is low based on both theoretical calculations and weight of evidence. The risks from most toxic contaminants at OU1 are further reduced because of the very restricted distribution and low quantities of the substances.

Overall, the baseline ecological risk and human health assessment provides a basis for informed risk management decisions regarding future land uses and remedial measures. However, the compatibility of public health and environmental evaluations should be considered when risk management decisions are made. Specifically, future commercial or residential development

may alter or destroy local ecological habitats which might have a more significant impact on the area than the residual contaminants.

The Draft Phase III RFI/RI has been submitted to CDH and EPA. A Corrective Measures Study/Feasibility Study (CMFS) will be the next document produced after the Final Phase III RFI/RI has been approved. The CMFS discusses the possible solutions to the problems cited in the RFI/RI and whether or not those corrective measures are feasible.

## Buffer Zone is Home to RF Wildlife



Restoring and maintaining the environment in and around the Rocky Flats Plant is not only important for the people who live and recreate in the Denver metropolitan area, but also for our wildlife counterparts.

Numerous studies are conducted yearly to gather data about the wildlife, vegetation, aquatic and bird species that either live or migrate in the Rocky Flats area. These studies are useful in achieving environmental restoration objectives by using the data as reference points for work plans, remedial investigation plans and other related documents.

The industrialized area at Rocky Flats is highly developed for technical operations, but wildlife, particularly birds, use artificial structures within the industrial area as temporary "hanging out" spots.

The buffer zone surrounding the industrialized area, however, offers a greater variety of wildlife and vegetation a more permanent living arrangement. Several types of vegetation are found in the buffer zone. Included are flora species that might be found in any prairie and foothill locale. Water-loving vegetation exists in the site's drainage and wetlands. Two examples of such vegetation are disturbance-sensitive grasses such as big bluestem and side oats grama.

Other sensitive plant species in the buffer zone are the Colorado butterfly plant and the toothcup. Studies have not confirmed any negative vegetative stress attributable to hazardous waste contamination, so many additional species might eventually be introduced to the buffer zone site.

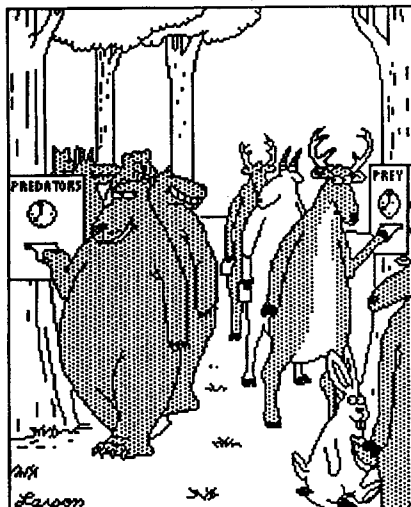
The Rocky Flats Plant site and its buffer zone affords a habitat that is suitable for a variety of wildlife species indigenous to western prairie regions. The most common large mammal is the mule deer with an estimated 100 to 125 permanent residents at RFP. A number of small carnivores, such as the coyote, red fox, striped skunk and long-tailed

weasel are also found in the buffer zone. Small herbivores can be found throughout the plant complex and buffer zone, including species such as the pocket gopher, white-tailed jackrabbit, and meadow vole.

Commonly observed birds include western meadowlarks, horned larks, mourning doves and western kingbirds. A variety of ducks, killdeer and red-winged blackbirds are seen in areas adjacent to ponds. Common birds of prey in the area include marsh hawks, red-tailed hawks and great horned owls. Bald eagles and golden eagles are seen at Rocky Flats as migrants and winter transients.

Bull snakes and rattlesnakes are the most frequently observed reptiles. The eastern short-horned lizard has been reported on the site, but these and other lizards are not commonly observed. The western painted turtle is often found in and around many of the ponds.

For more information about the Rocky Flats buffer zone, please call Melanie Zgabay, EG&G Community Relations, at 303-966-4001. Tours of the buffer zone are available.



Wildlife day shifts

# DOE Submits New Plan

Some wastes generated at Rocky Flats are subject to prohibition from land disposal as set by the Resource Conservation and Recovery Act (RCRA).

A portion of existing RCRA hazardous waste regulations called the Land Disposal Restriction (LDR) regulations requires that waste containing certain constituents be treated to reduce toxicity. Once the toxicity has been reduced to specific concentrations, or by utilizing specific treatment technologies, it will then be considered for land disposal.

On June 10, 1992, DOE submitted a draft Comprehensive Treatment and Management Plan (CTMP) to the EPA. The CTMP's primary objective is to identify treatment methods and management programs at Rocky Flats to ensure that the Land Disposal Restricted (LDR) mixed waste generated at Rocky Flats is managed in accordance with state and federal regulations.

The initial objectives of the draft CTMP are to (1) identify specific LDR wastes at Rocky Flats covered in the Federal Facility Compliance Agreement (FFCA), (2) describe certain waste treatment and management options for ensuring those LDR wastes are managed in accordance with the LDR regulations, and (3) develop the milestones for those wastes requiring treatment.

Rocky Flats has accumulated a backlog of LDR wastes at several locations around the plant. The backlog is a result of manufacturing activities, residue processing and general maintenance activities. With the change of mission for Rocky Flats, waste generation sources are expected to change. Future waste will be generated

from analytical operations, environmental restoration and decontamination and decommissioning of facilities.

Rocky Flats is committed to a proactive approach regarding the CTMP's ongoing interface with the public. Public involvement and information sharing opportunities will be available.

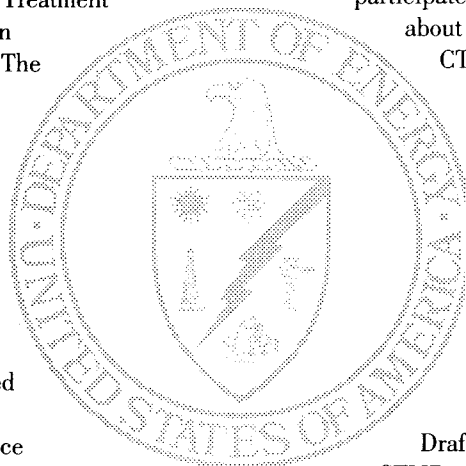
A Citizen Review Group (CRG) was formed to review the initial draft CTMP. This group includes local business leaders, environmental group members, state and local government officials, educators and local land owners. The primary task of the group has been to thoroughly review the document and participate in detailed discussions about information in the CTMP.

After reviewing the draft, the CRG will recommend to the DOE and EPA any modifications and/or clarifications that might make the document more informative for the public.

Upon completion of the Draft Final version of the CTMP, a 60-day public comment period will be announced. A public information meeting will be conducted during the 60-day comment period to explain LDR wastes and the CTMP.

Rocky Flats Plant representatives will offer presentations upon request regarding LDR wastes and the CTMP to community groups, businesses, schools and other interested parties. With some advance planning, plant tours can be arranged.

For more information about the CTMP or the CRG, please call Carla Sanda, Community Relations, at 303-966-2011.



## IAG MILESTONES MET

- **OU9 - Original Process Waste Lines**  
The FY93 milestone was met with the submittal of the Final Phase I RFI/RI Work Plan.
- **OU10 - Other Outside Closures**  
The FY93 milestone was met with the submittal of the Final Phase I RFI/RI Work Plan.
- **OU11 - West Spray Field**  
FY92 milestones for OU 11 have been met.
- **OU12 400/800 Area**  
FY92 milestones for OU12 have been met.
- **OU13 - 100 Area**  
The FY93 milestone requiring the submittal of the Final Phase I RFI/RI Work Plan has been met on schedule.
- **OU14 - Radioactive Sites**  
The FY93 milestone requiring the submittal of the Final Phase I RFI/RI Work Plan will be met on schedule.
- **OU15 - Inside Building Closures**  
The Final Phase I RFI/RI Work Plan will be submitted on time satisfying the FY93 milestone.

## **IAG SCHEDULE EXTENSIONS**

The OUI Final RFI/RI Report originally due January 4, 1992 has been granted a 3 month extension and will now be due April 4, 1993.

The draft and final Treatability Study Report has been replaced by one document, the Annual Treatability Study Report, due March 8, 1993.

## **Upcoming Public Meetings**

### **Quarterly Environmental Restoration Public Information Meeting**

December 8, 1992, 7:00 - 9:00 p. m.

TOPIC: Overall ER update, specifics on OUI and OUI6

*Denver Marriott West*

1717 Denver West-Marriott Bldg. • Golden, Colorado 80401

### **Health Advisory Panel Public Meeting**

December 16, 1992 6:00 - 8:00 p.m.

*Ramada Hotel*

8773 Yates Drive • Westminster, Colorado

(TENTATIVE)

### **Defense Nuclear Facilities Safety Board Public Meeting on ORR for Bldg. 707**

Time and Place to be decided. For information, please contact Cathy Carlson at (303) 966-4261.

### **General Rocky Flats Plant Tours:**

December 14 and January 11, 1992

Please call (303) 966-4261 one week in advance for reservations

(TENTATIVE)

### **Presentation to CO Council on Rocky Flats**

Building 707 ORR

December 9, 1992 5:00 p.m.

R-

87 Yates Drive • Westminster, Colorado

For more information, call Cathy Carlson at (303) 966-4261

## **RCRA Modifications**

### **RCRA Permit Modification Request 10**

DOE is requesting modifications from CDH to its RCRA Permit. This request includes both a Class 1 and a Class 2 modification. The modification must undergo public comment and be approved by the Colorado Department of Health (CDH).

The Class 1 modification request would revise six RCRA unit numbers. Changing these identification numbers has no effect on what is stored or treated at the units, nor does it affect the volume or management of the units.

The Class 2 modification request includes two changes: (1) clarification of the Contingency Plan's requirements for cleaning up after a hazardous waste release, and (2) adding waste codes for storage.

### **RCRA Permit Modification Request 12**

DOE is also requesting a Class 3 modification to its RCRA Permit. Class 3 modifications substantially alter the permit. The modification must undergo public comment and be approved by the Colorado Department of Health (CDH).

This permit modification would add twelve treatment and storage units to the existing RCRA permit. These units would increase Rocky Flats' permitted storage by approximately nine times the current capacity.

A sixty-day comment period for the permit modification request began November 13, 1992 and ends January 12, 1993. CDH will accept written comments on this request throughout the comment period.

Please address written comments to Gary Baughman, CDH, 4300 Cherry Creek Drive South, HMWMD-HWC-B2, Denver, Colorado 80222-1530, or call (303) 692-3300.

## **New Documents**

- OUI Phase III RFI/RI Report 881 Hillside Area
- No Further Action Justification Document Final, RFP Low Priority Sites Operable Unit 16
- Baseline Biological Characterization of Terrestrial & Aquatic Ecosystems
- Environmental Restoration Program Monthly Report for September 1992
- Final Phase I RFI/RI Work Plan for OUI5
- RCRA Permit Modification Request No. 10
- RCRA Permit Modification Request No. 12

# Public Invited to Use Reading Rooms

The following reading rooms contain current information, technical reports, and reference documents on environmental restoration at the Rocky Flats Plant:

## **Rocky Flats Plant Reading Room\***

### **Front Range Community College Library**

3645 West 112th Avenue  
Level B, Center of Building  
Westminster, Colorado 80030  
(303) 469-4435

#### *Hours:*

Monday - Tuesday 12:00 pm - 8:00 pm  
Wednesday 11:00 am - 4:00 pm  
Thursday - Friday 8:00 am - 4:00 pm

### **Colorado Council on Rocky Flats\***

1536 Cole Boulevard, Suite 325  
Denver West Office Park, Building 4  
Golden, Colorado 80401  
(303) 232-1966

#### *Hours:*

Monday - Friday 8:30 am - 5:00 pm

### **EPA Superfund Records Center\***

999 18th Street, Suite 500  
Denver, Colorado 80202-2405  
(303) 293-1807

#### *Hours:*

Monday - Friday 8:00 am - 4:30 pm

### **Colorado Department of Health\***

Hazardous Materials and Waste  
Management Division  
4300 Cherry Creek Drive South  
Bldg. B, 2nd Floor  
Denver, Colorado 80222-1530  
(303) 692-3312

#### *Hours:*

Monday - Friday 8:00 am - 5:00 pm

### **Standley Lake Library**

8485 Kipling Street  
Arvada, Colorado 80005  
(303) 423-4600

#### *Hours:*

Monday - Friday 10:00 am - 9:00 pm  
Friday - Saturday 10:00 am - 5:00 pm  
Sunday 12:00 pm - 5:00 pm

### **United States Department of Energy Freedom of Information and Privacy Branch Office**

1000 Independence Avenue, S. W.  
Washington, D.C. 20585  
(202) 586-6025

#### *Hours:*

Monday - Friday 9:00 am - 4:00 pm  
(Eastern Time Zone)

\*Information Repository

## **Environmental Restoration**

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